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AIR WAR COLLEGE

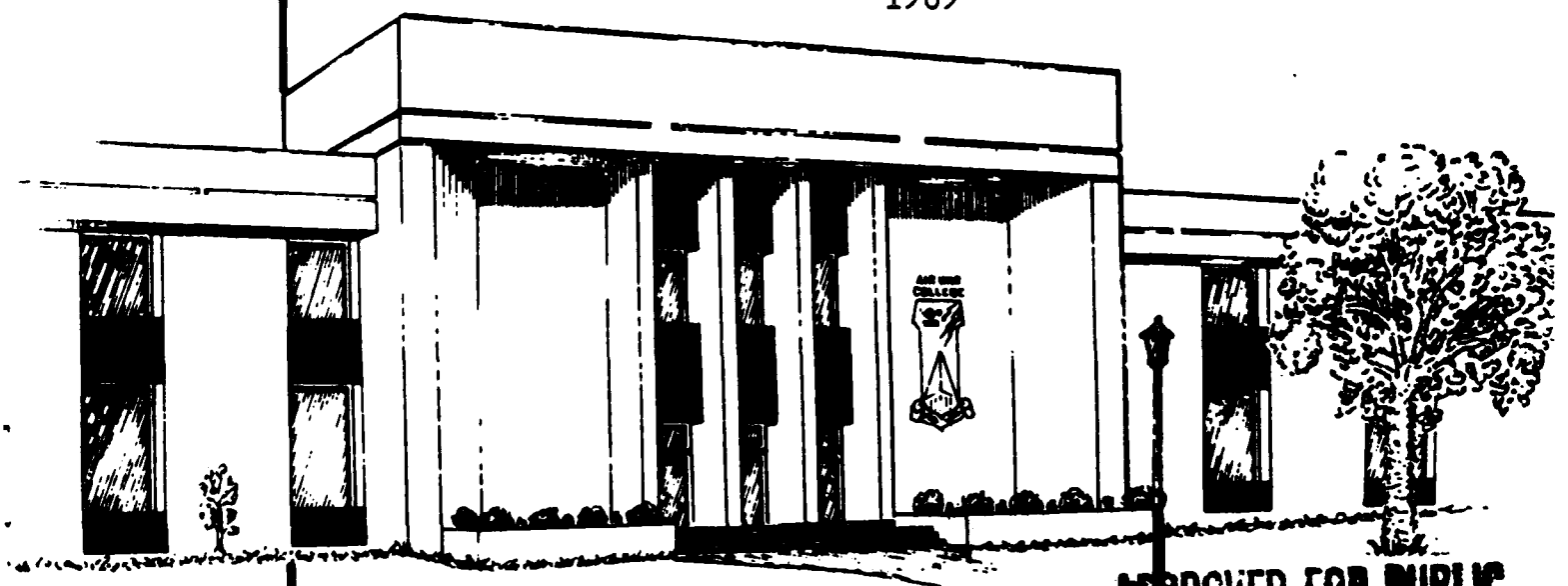
RESEARCH REPORT

AIR CAMPAIGN CENTRAL EUROPE:

COMPARATIVE ANALYSIS BETWEEN WORLD WAR II AND THE PRESENT

LIEUTENANT COLONEL WILLIAM HARRELL, JR

1989



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MAXWELL AIR FORCE BASE, ALABAMA

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AIR CAMPAIGN CENTRAL EUROPE: A COMPARATIVE ANALYSIS BETWEEN WORLD WAR II AND THE PRESENT

by

William S. Harrell Jr.
Lieutenant Colonel, USAF

A DEFENSE ANALYTICAL STUDY SUBMITTED TO THE FACULTY

IN

FULFILLMENT OF THE CURRICULUM

REQUIREMENT

Advisor: Colonel Robert I. Bond

MAXWELL AIR FORCE BASE, ALABAMA

May 1989

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EXECUTIVE SUMMARY

TITLE: Air Campaign Central Europe: A Comparative Analysis Between World War II and the Present

AUTHOR: William S. Harrell Jr., Lieutenant Colonel, USAF

One of the most important aspects of the defense of Western Europe is NATO's projected air campaign to counter a Soviet or Warsaw Pact invasion. This Defense Analytical Study analyzes the present air campaign strategy for NATO's Central Region by comparing it to Ninth Air Force operations in Europe during World War II. The objective is to glean the tactical and strategic lessons from World War II that are applicable to NATO today. Organizational and operational similarities in Europe between World War II and the present provide a legacy that impacts the execution of today's NATO air campaign. Both periods focus on the same components of air campaign strategy: gain and maintain air superiority; provide direct support to ground operations; accomplish the air interdiction campaign. Major lessons learned came from each of these areas during World War II. Some reinforce today's campaign philosophy, while others offer food for thought on issues that may hinder our ability to conduct tactical air operations in Central Europe.

BIOGRAPHICAL SKETCH

Lieutenant Colonel William S. Harrell Jr. graduated from the United States Air Force Academy in 1970. After completing pilot training at Craig AFB, he was assigned to Bien Hoa AB, RVN, where he flew 366 combat missions in the A-37. Returning to the United States he checked out in the A-7D and was a member of the 23TFW "Flying Tigers" at England AFB, La. Following a staff tour at Langley AFB, Va, as part of the HQ TAC Inspector General Team, Colonel Harrell served as an F-5 instructor pilot in the Yemen Arab Republic. While there, he helped develop that country's first US tactical fighter program. MacDill AFB, Fl, was Colonel Harrell's next assignment, flying for three years as an F-16 instructor pilot. After completing Army Command and General Staff College, Colonel Harrell spent four years as an Air Operations Staff Officer working for the DCS Plans and Operations, HQ USAF. His duties included tactical fighter planning and force development. Colonel Harrell is a graduate of the Air War College, class of 1989.

TABLE OF CONTENTS

CHAPTER I

INTRODUCTION

Despite recent improvements in East-West relations brought on in large part by Soviet General Secretary Mikhail Gorbachev's glasnost and perestroika initiatives, support for the North Atlantic Treaty Organization (NATO) and the military defense of Western Europe against Soviet and Warsaw Pact (WP) aggression remain vital components of US National Security Strategy. (23:27) US interests in Western Europe, which spring from a common heritage, close economic ties, and a common bond of democratic values, have resulted in the largest regional deployment of American forces outside the US. (23:27) NATO is the military alliance charged with maintaining the security of Western Europe. NATO's first priority is deterrence. (29:255) If deterrence fails, however, and conflict occurs what form will it take? This study will focus on the use of allied airpower in Europe at the operational level of war. The operational level of war is that level between strategy and tactics that centers on how to conduct overall theater campaigns. (10:3)

What is the current U.S. and NATO air campaign strategy for the European theater? One way to critically analyze today's air campaign strategy is to compare it with World War II (WW II). Do current air campaign strategies for

US and NATO forces in Central Europe adequately reflect airpower lessons learned from WW II? Historical experience can provide guidelines for what has worked and what has not. It serves as the laboratory in peacetime to develop and try the theories of war. (31:6) As the commander of Fourth Allied Tactical Air Force in Germany stated during a speech in 1987:

> During World War II, commanders in both Central Europe and North Africa, were struggling with the best way to integrate army, maritime and air operations, with the aim of creating a stronger entity. The success and failures of those early efforts produced lessons that we must remember today; in fact, I believe that some of our recent advances may only be rediscoveries or variations on themes that our predecessors already knew but laid aside in the turmoil and uncertainty of the post-war era. (8)

Although other recent conflicts, most notably the 1973 and 1982 Arab-Israeli wars, can provide valuable insights into a possible conflict in Europe, WW II is significant for several reasons. First, it was fought over the same terrain that we stand on today. It was the only time America fought a large scale air war. The US national will and resolve to fight in WW II was similar to what it would be today if the WP attacked Western Europe. Lastly, joint and combined warfare was exercised in Europe during WW II to the same degree that would be necessary today in order to defeat a WP invasion.

In order to sharpen the focus of discussion, this airpower analytical study will address only conventional

conflict and the air campaign in NATO's Central Region. Historically, although air forces from many allied nations fought in Europe during WW II, this study will look in depth at only the tactical air campaign of the US Ninth Air Force. Organized on 16 Oct 1943 in Great Britain, Ninth Air Force was the largest tactical air component in the European Theater of Operations during WW II. (16:1-2) It provided air support for the Normandy invasion, and served as the principal air arm for the US 12th Army Group as it marched across France, the Benelux Countries, and into Germany. Many problems encountered in WW II with Ninth Air Force conducting joint and combined operation are still with us today. A look back will be a useful reminder of how these problems developed and how they might be solved in the present context. (16:vii)

This analytical study is divided into chapters that cover the organization of forces in the Central Region (WW II versus today), the military strategy of both periods, and finally an analysis of past and present air campaign plans to include similarities, differences, and applicable lessons learned.

CHAPTER II

ORGANIZATION OF FORCES - WORLD WAR II vs NATO TODAY

A review of the organization and forces of WW II and the present provides the basic framework to examine the similarities and differences between the two periods. The objectives and problems encountered in setting up the most powerful tactical air force in the world in 1944-45 and the organizational decisions that were made still affect Europe's Central Region today. (9:107)

World War II Organization

As the allies approached the western border of Germany in Dec 1944, alliance ground and air power had reached full maturity. Supreme Headquarters Allied Expeditionary Forces (SHAEF), under the command of General Dwight Eisenhower, controlled three army groups and the respective tactical air forces that supported them. Twenty First Army Group, commanded by Field Marshal Bernard Montgomery, was on the North with Canadian 1st and British 2nd Armies along with the British Second Tactical Air Force. Occupying the center was 12th US Army Group, under the command of General Omar Bradley. Twelfth Army Group was made up of the US 1st, 3rd, and 9th Armies all supported by Ninth Air Force. To the South, 6th Army Group, commanded by Gen

Jacob Devers, contained the US 7th and French 1st Armies, and the First Tactical Air Force (Provisional). (9:597)

From the strategic perspective, operational control of Ninth Air Force, as the air component of a tactical air-ground striking force, was exercised by SHAEF, through its Air Staff Section. Administrative control, however, remained with the US Strategic Air Forces in Europe, under the command of Gen Carl "Tooey" Spaatz. This dual arrangement proved to be "marginally satisfactory" at best. The rapidly changing tactical situation in Europe, and the urgency of operational, administrative, and supply problems dictated the need for one overall controlling agency. From the viewpoint of attaining maximum efficiency and effectiveness, Ninth Air Force would have benefited from a separate, but co-equal, air headquarters at theater (SHAEF) level. (9:108-110; 16:4)

From the outset, Ninth Air Force during WW II was designed for operational partnership with the 12th Army Group and its component armies. (16:8) Organizational structure was a product of necessity, and the initial Ninth Air Force organization constantly changed to meet new threats and requirements. This was the first time such a partnership had been built and there were no models to follow or imitate. To ensure air-ground cooperation, Ninth Air Force was organized to meet certain broad objectives: (1) maintain operational flexibility in order to apply tactical striking force anywhere along the front to a depth of 200 miles; (2) conduct

active air defense behind the entire US front; (3) provide a tactical air control system capable of coordinating the air effort with any phase of the ground war; (4) rehabilitate or construct the required airfields for operations on the Continent. (16:8)

In retrospect, the key organizational objective was flexibility. Organizational and operational flexibility enabled Ninth Air Force to employ airpower where and when it was needed, and provided ground forces the freedom of action necessary to fully exploit the enemy. It permitted diversion of tactical air assets to meet critical situations and guaranteed the ability to rapidly shift from one phase of operations to another. (16:2)

To ensure flexibility and fulfill its operational commitments, Ninth Air Force was eventually divided into seven major commands.

Three Tactical Air Commands (TACs) employed fighter bombers, and provided the primary air-to-ground striking power of Ninth Air Force. Each TAC Headquarters maintained close coordination, to include operational planning and colocation, with its assigned field army. The TAC was a new Army Air Force organization, made up of four to eight fighter bomber groups (three squadrons per group) and one reconnaissance group. (16:9) The actual number of groups depended on the importance assigned to current operations of

the associated field army. (9:597) The TAC was given primary responsibility for supporting the individual field army, however, Ninth Air Force retained the prerogative to shift forces in order to meet contingencies anywhere in the army group area. As ground strategy changed, units were transferred from one TAC to another. This highest to lowest level coordination and cooperation between 12th Army Group, Ninth Air Force, and the TACs produced a very effective air-ground team. (6:230-231; 9:597-598; 16:9)

Ninth Air Force's medium and light bombers, under IX Bombardment Division, were controlled at Ninth Air Force level. They were not assigned to a particular TAC nor did they respond to daily requirements from army level. Ninth Air Force commanders felt these assets could be more effectively used in an organized campaign to strike static targets such as communications centers, bridges, railway yards, and supply depots. The importance of these targets could best be measured at air force level and the air campaign executed throughout the entire army group area. (6:231; 16:10)

Ninth Air Force's Air Defense Command was responsible for the air defense of all Ninth Air Force installations and the rear area of 12th Army Group. (6:218) The objective was to leave Ninth Air Force TACs free from rear area defense responsibilities on the Continent. (9:114) IX Air Defense Command was equipped with air warning systems and various

types of air defense weapons, including dedicated air defense fighter aircraft and a large quantity of antiaircraft artillery. (16:10)

IX Engineering Command was a unique command for Ninth Air Force. The greatest limiting factor on Ninth Air Forces's ability to carry out its mission of rapid mobility was the availability of airfields directly behind the advancing ground forces. (16:10-11) The engineering command was charged with constructing airfields, bases, and other installations in Europe that would enable Ninth Air Force units to employ airpower anywhere in support of 12th Army Group. (6:218)

IX Service Command was the seventh and largest major command in Ninth Air Force. (16:11) Its mission was to provide supply and maintenance support across rapidly expanding lines of communication as US forces moved across Western Europe. (6:218)

NATO Organization

Today, NATO's Allied Command Europe (ACE) is commanded by a US army general, Supreme Allied Commander Europe (SACEUR), and its peacetime headquarters, Supreme Headquarters Allied Powers Europe (SHAPE), is in Belgium. ACE is responsible for the defense of NATO territory from the North Cape of Norway across the Mediterranean Sea to North Africa, and from the Atlantic to Turkey's border with the

Soviet Union. (19:14) Directly under ACE are three Major Subordinate Commands (MSCs): Allied Forces Northern Europe (AFNORTH), Allied Forces Southern Europe (AFSOUTH), and Allied Forces Central Europe (AFCENT). (28:11-14,11-15; 24:37,57)

AFCENT controls Europe's Central Region which is the focus of this study. The AFCENT commander, CINCENT, is a German army general who has operational control of both land and air forces assigned to the region. (28:11-14,11-15)

CINCENT controls two army groups and their associated allied tactical air forces. Northern Army Group (NORTHAG) is responsible for defense of the northern half of the Central Region and is made up of four in-place corps, one each from the Netherlands, West Germany, Great Britain, and Belgium. The Second Allied Tactical Air Force (2ATAF) is responsible for supporting NORTHAG. (8; 28:11-14,11-15)

Central Army Group (CENTAG) is responsible for defending the southern half of the Central Region. Its in-place ground forces include two US corps, two West German corps, and a Canadian Battle Group. The Fourth Allied Tactical Air Force (4ATAF) supports CENTAG. (8; 28:11-14,11-15)

Commander Allied Air Forces Central Europe (COMAAFCE) is the overall theater air commander. He is directly responsible to CINCENT for the employment of airpower in the

Central Region, and has operational command of the two tactical air forces, 2ATAF and 4ATAF. (28:11-14, 11-15) AAFCE was created in the mid-1970s to provide centralized control of air assets and ensure that these scarce resources are used where they are needed most in the Central Region. (8)

Central Region Allied Tactical Operations Centers (ATOCs) handle fighter aircraft tasked for missions such as offensive counterair, interdiction, and offensive air support which includes tactical reconnaissance, battlefield air interdiction and close air support. Sector Operations Centers (SOCs) are responsible for defensive counterair and employ both defensive fighter aircraft and surface-to-air weapons systems. (28:11-15)

Organizational Comparison World War II vs NATO

How do the similarities and differences in organizational structure between WW II and the present affect the air campaign strategy for Central Europe?

Organizational Legacy

In many respects, the allied command in Central Europe today reflects the organizational legacy from WW II. The 21st Army Group on the northern side of Gen Eisenhower's force during WW II was commonly referred to at the time as the Northern Group of Armies, and that name gave way to NORTHAG today. The 12th Army Group, known as the Central

Group of Armies, occupied the center of the allied line, hence the modern term CENTAG. (18:48-49) The British Second Tactical Air Force, supporting 21st Army Group, equates directly to the present 2ATAF. In 1944, SHAEF controlled three army groups, the 21st, 12th, and 6th. Today, AFCENT roughly equates to SHAEF, and it controls two army groups, NORTHAG and CENTAG.

In assessing today's Central Region military organization, the close liaison and colocation of 4ATAF with CENTAG has its roots in the WW II relationship between Ninth Air Force and 12th Army Group. Similarly, the combination of 2ATAF and NORTHAG stems directly from British Second Tactical Air Force and 21st Army Group.

In many cases, the organizational similarity between WW II and the present has a direct bearing on the execution of air campaign strategy. What worked then still works today. This will be examined in greater detail in Chapter IV.

Organizational Differences

While there are similarities at the upper level of organization between today's NATO structure and the one commanded by SHAEF during WW II, significant differences exist at the tactical level of organization. NATO appears to lack the organizational flexibility of WW II. Two examples are IX Engineering Command and IX Air Defense Command.

IX Engineering Command ensured that airbases were available to support 12th Army Group operations during the advance across Europe. Today, 4ATAF and 2ATAF do not have an equivalent to IX Engineering Command. Central Region tactical fighters, with the exception of British Royal Air Force Harriers, are tied to fixed airfields. Active and passive air defense measures have been taken to increase the survivability of NATO airbases; however, NATO lacks the timely, large scale construction and repair capability that was present during WW II.

In NATO, fighter aircraft, such as the F-15, will be used during defensive counterair operations to protect friendly airspace during a WP attack. They may also be used during offensive counterair operations to escort ground attack aircraft penetrating WP territory. In WW II, IX Air Defense Command was a separate organization whose fighters were charged solely with defending 12th Army Group airspace. The flexibility this allowed Ninth Air Force in pursuing its air superiority and interdiction campaigns was significant and will be discussed further in Chapter IV.

Overall Command and Control

Ninth Air Force operations during WW II were hindered by a dual headquarters arrangement where operational control was exercised by SHAEF while administrative control was exercised by United States Strategic Air Forces in Europe. With split responsibilities, actions were occasionally too

little or too late. As previously mentioned, Ninth Air Force would have benefited from a separate, but co-equal, headquarters at theater (SHAEF) level. Air and ground staffs would closely coordinate their operations but remain independently responsible to the Supreme Commander. (16:4)

AFCENT's command and control arrangement today closely parallels this recommended WW II structure. Central Region air assets are controlled by a single commander, AAFCE, who can exploit airpower advantages of mass, responsiveness, and flexibility. (10:4) Land commanders, NORTHAG and CENTAG are separate but co-equal with the air component commander AAFCE, and each has direct access to the overall commander AFCENT.

Loss of the Colocated Tactical Air Command (TAC) Structure

One key organizational difference between Ninth Air Force during WW II and the present NATO structure in Europe is the absence of the mobile TAC structure colocated with individual field armies. Ninth Air Forces's IX, XIX, and XXIX TACs were the key ingredients in the close liaison between tactical air power and the army maneuver forces. Ninth Air Force Headquarters rarely conducted detailed tactical planning for air-ground operations. (16:18) This planning, and the tasking to subordinate units, was done at the TAC level in close coordination with the applicable field army. Ninth Air Force exercised overall control, but

application of airpower was done at the TAC level. (16:38) US air and ground commanders agreed that colocating army and air force staffs at the TAC and army level was one of the keys to close air-ground coordination in Europe during WW II. (16:28)

Today's NATO structure in Europe functions in a somewhat different manner. Fixed ATOCs and SOCs (not colocated with specific army units) fill the execution role of the WW II TACs. The focus for planning the allotment and apportionment of forces, where all the pieces of the air and land campaigns come together, is at the ATAF and army group level. (8) This is the lowest level where army and air force staffs are colocated in one headquarters. Joint army and air force staffs develop recommendations for the daily flying operation and, once approved, specific tasks are sent to ATOCs and SOCs for execution. (8)

In the final analysis, the glue that held the tactical operation together during WW II was at the TAC and field army level. Today, it has risen to the ATAF and army group level. Fixed TACs and detailed planning by Ninth Air Force would not have worked during the fast moving scenario of WW II. In today's defensive posture in Europe, emphasizing forward defense, fixed ATOCs and SOCs and greater involvement by higher headquarters appears to be an acceptable but perhaps worrisome solution based on WW II experience.

CHAPTER III

MILITARY STRATEGY FOR WESTERN EUROPE - WORLD WAR II vs NATO TODAY

After looking at the organization and forces for Ninth Air Force during WW II and for NATO's Central Region today it is necessary to examine the military strategies for these two periods. While organization and forces provide the building blocks for "what" can be done in an operational air campaign, basic military strategy sets the overarching framework for "how" and "why" an air campaign is conducted. It sets the tone for operations and establishes the objectives to be accomplished.

World War II Strategy

The Anglo-American strategy for coalition warfare during WW II began at the ARCADIA conference in Washington DC, shortly after Pearl Harbor. It was decided that the defeat of Germany would be the first priority. Decisive actions against Japan would be held in abeyance until matters in Europe were decided. (33:316-318)

By Jan 1943, with operation TORCH successfully completed and a second allied front opened in North Africa, British and American leaders met at Casablanca, in Morocco, to discuss the strategy for the war. Of primary concern was the cross channel invasion of Europe from Great Britain. President Roosevelt and Prime Minister Churchill agreed to

postpone the Normandy invasion until late Spring 1944. In the interim, the allies would exert direct pressure on Germany from the West through the American and British strategic bombing campaigns. The Casablanca Directive spelled out the objectives of the Anglo-American Combined Bomber Offensive (15:30)

The goal of the allied strategic bombing campaign was to destroy the German military, industrial, and economic complex. Targets included the German aircraft industry, transportation systems, oil production, and other industrial targets. (13:72-73) Defeat of the German Air Force was listed as the overriding objective because air supremacy was essential for success of the overall allied offensive. (9:xi) Strategic planners felt that destroying the German Air Force and crippling the German war economy would help lay the groundwork for the invasion into France.

After the 6 Jun 1944 landing at Normandy, allied military strategy centered on close cooperation between western forces to produce the total destruction and unconditional surrender of Germany. The land campaign, supported by tactical airpower, pushed to occupy Central Germany while the strategic bombing campaign destroyed Germany's vital war making infrastructure. (9:x-xxii)

NATO Strategy

Since WW II, US national strategy has dictated that America, in cooperation with its NATO allies, prevent the Soviet Union from dominating Western Europe. (23:1) When the North Atlantic treaty was signed, 4 Apr 1949, a new era of world relations began wherein treaty partners agreed "that an armed attack against one or more of them in Europe or the North Atlantic shall be considered an attack against them all." (7:48) Alliance strategy allows the US to combine its military resources with those of its allies, and effectively deter aggression. If deterrence fails, the alliance will defend national interests and restore peace on acceptable terms. (29:255)

In the 1950s, NATO defense strategy downplayed the role of conventional air and land forces in favor of a tripwire strategy that threatened massive nuclear retaliation if the Soviets or WP invaded Western Europe. By the early 1960s, credibility of the tripwire strategy was challenged when the Soviets developed and deployed a significant nuclear capability. (5:31-32) In 1967, NATO's Military Committee concluded that near nuclear parity existed between Soviet and NATO forces and through NATO MC 14/3 adopted the new military strategy of flexible response. (27:16)

The primary components of flexible response are graduated escalation and forward defense. The objective of flexible response is to provide unacceptable consequences for

initiating an attack by responding with appropriate levels of military action in order to restore the frontier. (8; 12:14) The strategy calls for NATO to be prepared for conflict on the conventional, theater nuclear, and strategic nuclear levels. NATO must be able to deter and, if necessary, defeat WP forces at each level, escalating quickly if required. (5:32-33; 27:18)

An integral part of NATO's flexible response strategy is the doctrine of forward defense. (5:32; 8) From a military perspective, the Soviet Union's geographic location provides a major advantage in the European region. To counter this advantage, and defend vital interests, the US maintains significant combat forces forward deployed. (29:258) Additionally, the European region lacks geographic depth. NATO must defend forward because it cannot effectively trade space for time. The distance from the Inner German Border to the Rhine River is less than 300km. (26:57) Besides geographic factors, West Germany for political and nationalistic reasons remains stridently committed to NATO forward defense to protect as much of its population and industry as possible. (5:32-33)

Impact of Military Strategies World War II vs NATO

How do the military strategies of WW II and today impact the content and conduct of tactical air campaigns in Europe's Central Region?

Military strategy establishes objectives, sets the agenda, and provides direction for air operations. In no other area are the contrasts as great in comparing WW II with the present than in military strategy. The key differences are in military posture (offensive versus defensive), combining strategic as well as tactical air campaigns, and in provisions for war termination.

During WW II in Europe, the allied military strategy was offensive in nature. Actions were designed to produce the total destruction and unconditional surrender of Germany. Air and land forces were allocated to accomplish this objective. The allies combined an attack on the German homeland, through strategic bombing, with a land campaign, supported by tactical airpower, to defeat German military forces and occupy German territory.

While the strategic bombing campaign against Germany is not the primary focus of this analytical study, it had a decided impact on Ninth Air Force's tactical air campaign in Europe. The effectiveness of American and British strategic bombing efforts were born out by findings in the United States Strategic Bombing Survey conducted after the war:

> By the beginning of 1945, before the invasion of the homeland itself, Germany was reaching a state of helplessness...Her armies were still in the field, but with the impending collapse of the supporting economy, the indications are convincing that they would have had to cease fighting - any fighting - within a few months. Germany was mortally wounded. (30:38)

The principal objective of NATO's military strategy is deterrence. If deterrence fails, NATO is prepared for certain phases of conflict, under the strategy of flexible response, starting off defensively by absorbing the first WP attack. NATO's objective will be to blunt the WP invasion, transition to the offensive, and restore the Inner German Border. (8; 12:14) After reestablishing the border, war termination today will be much different than in WW II. Actions will be as much political as military. By all indications, NATO will not initiate a strategic bombing campaign on Soviet or WP homelands to destroy the industrial war producing infrastructure of the enemy.

From a military strategy perspective, NATO's tactical air campaign today appears tougher to execute than Ninth Air Force's mission in 1945. The WP will start out with the offensive advantage, NATO's tactical air campaign will not benefit from a corresponding strategic bombing campaign, and war termination may be accomplished through negotiated settlement rather than unconditional surrender.

CHAPTER IV

AIR CAMPAIGN - WORLD WAR II vs NATO TODAY

Previous chapters have examined the organization of forces for WW II and the present, and the military strategy that governs each period. With this backdrop, it is now time to address the main theme of this analytical study, the WW II allied air campaign and the air campaign postulated for NATO.

A campaign plan synchronizes land, sea, and air efforts, and provides overall purpose and direction to theater military efforts. It outlines specified and implied tasks, command and control relationships, phasing, and contingency operations. (20:138) It should focus on the enemy's center of gravity in order to undermine his strengths, rob him of the initiative, and defeat him. The campaign plan translates strategic guidance into operational direction and provides the commander's vision of how he will prosecute the war in his area of responsibility. (20:137)

World War II Air Campaign

Introduction

The genesis of the allied tactical air campaign in Western Europe during WW II can be traced to the North African desert campaign conducted between 1942-43. (9:806-807) In North Africa, ground commanders initially believed in airpower only if they could see it overhead. (8) As a

result, allied air forces were parcelled out in small groups to individual ground units. These "penny packets" were used as an umbrella defense which invited defeat from the more centrally managed German Air Force. The Luftwaffe flew as a single entity and attacked in mass. Piecemeal employment of allied airpower diluted its effectiveness and destroyed the advantages of mass, responsiveness, and flexibility. (9:807; 10:4)

British Royal Air Force (RAF) leaders became the chief spokesmen in asserting the primacy of air superiority and the need for centralized control over all theater air assets. (15:8,32-35) RAF Air Vice Marshal Arthur Coningham, the principal air commander in Western Africa, stated that air superiority had to be achieved before close air support and interdiction missions could be effectively accomplished. Without air superiority, other tactical missions became inconsequential. (15:8)

In Jan 1943, at the CASABLANCA conference, Anglo-American leadership defined the West's grand strategy and established guidelines for the strategic and tactical air campaigns to be conducted against Germany. (15:30)

In the US, Army Air Force tactical air doctrine was revised to reflect the outcome of the CASABLANCA conference and the lessons learned in North Africa. This revised doctrine was issued as Field Manual 100-20, Command and

Employment of Air Power, dated 21 Jul 1943. FM 100-20 clearly stated that land and air power were co-equal but interdependent, and that air superiority was the first requirement for the success of a major land operation. US air forces were to be primarily employed against an enemy's air force until air superiority was achieved. Inherent flexibility is airpower's greatest asset. Flexibility allows the weight of airpower to be quickly sent against selected enemy strengths to gain the advantage. To ensure flexibility, airpower must be placed under a single air commander. (32:1-2)

Air Campaign

FM 100-20 played a key role in shaping Ninth Air Force's tactical air campaign in Europe during WW II. It established three separate but inter-related phases of air operations and assigned priorities to each:

PHASE 1 (first priority): Gain and maintain air superiority. This can be most effectively accomplished by attacking enemy airfields, destroying aircraft on the ground, and by fighter action in the air.

PHASE 2 (second priority): Disrupt hostile lines of communication, and prevent movement of enemy troops and supplies into or within the theater of operations.

PHASE 3 (third priority): Participate in combined air-ground operations to destroy enemy troops and material in the battle area in order to gain objectives immediately in

front of the ground force. (16:1,7; 32:10-11)

In today's lexicon, these priorities equate to counterair operations, air interdiction, and offensive air support. The task of this analytical study is to review how these missions were conducted by Ninth Air Force during WW II to determine what lessons are applicable to today's scenario in Central Europe.

Tactical Operations

The tempo of Ninth Air Force operations in Europe during WW II was not matched, on a comparable scale, by any other American Air Force. This high sortie rate closely equates to the postulated scenario in NATO's Central region today. The speed with which Ninth Air Force planned and executed missions, the variable strength of force packages depending on the target, the multiple turn-arounds, and the range of tactical sorties all have direct application to Europe's Central Region. (16:7-8)

<u>Normandy Invasion (May-Jul 1944)</u>

Ninth Air Force was officially organized in Great Britain on 16 Oct 1943. By May 1944, Ninth Air Force was at almost full strength, 18 fighter groups and 11 medium/light bomber groups, and assumed responsibility for pre-invasion accomplishment of PHASE 1 (air superiority) and PHASE 2 (interdiction) objectives. (9:113,124; 16:17) The allies planned to neutralize airfields in Western Europe that the

German Air Force might use to oppose the Normandy landing. The objective was to drive the Luftwaffe east into Germany so that it would not be a factor for allied fighters operating out of England. (9:162) Thirty-four German airfields were struck within a 130 mile radius of the Normandy landing area, selected radar stations were destroyed, and the Luftwaffe was attacked in the air and on the ground. (6:273; 9:141,164)

During the same time period, as many as 1000 sorties per day were launched against lines of communication supporting the coastal defenses in France and against rail, road, and river transportation systems carrying supplies and reinforcements. (16:17) On 20 May 1944, armed reconnaissance missions began against moving trains in France, Belgium, and Germany to restrict German daylight movement. As the last part of Gen Eisenhower's interdiction campaign, IX Bomber Command and IX and XIX TACs were given responsibility for isolating the Normandy and Brittany coasts by: (1) destroying all major railroad and highway bridges across the Seine River leading from Paris to the English Channel; (2) neutralizing enemy movement by hitting railroad and road junctions. (6:268-272; 16:17)

To augment tactical operations, Gen Eisenhower assumed operational control of the US and British strategic bomber force on 14 Apr 1944. In preparation for the Normandy invasion, heavy bombers were assigned the mission of destroying the German Air Force in France as the first

priority, and attacking enemy rail centers as second priority. (9:142)

Ninth Air Force fighter bombers flew approximately 2,300 sorties on D Day, 6 Jun 1944. (6:280) The principal objectives were to protect cross-channel movement, prepare the landing site by destroying shore defenses, protect ground forces ashore, deny the enemy a counterattack capability by interdicting lines of communications into the Normandy area, and provide full PHASE 3 cooperation with ground forces moving inland. (16:20)

The success of these operations is measured by the fact that the German Air Force failed to effectively oppose the landing, and that German ground reinforcements were severly hampered in their movement to the front. (9:xviii; 16:20) After the landing, German air and ground commanders agreed that tactical airpower was a decisive factor in enabling Allied Expeditionary Forces to secure a lodgement on the Normandy Coast. (6:294-295; 16:19)

Ninth Air Force reconnaissance aircraft provided invaluable information to tactical commanders during the Normandy invasion. The value of their work, however, pointed out that reconnaissance assets were poorly planned for in the original organization of Ninth Air Force. As the war progressed, the need for accurate, timely tactical reconnaissance dictated that a minimum of one reconnaissance

group be assigned to each TAC, with an additional reconnaissance group assigned at air force headquarters to fill air force-army group requirements. (16:21) These reconnaissance lessons from WW II are directly applicable to NATO's Central Region today.

Breakout from the Normandy Beachead and the March Across France (Jul-Dec 1944)

Operation COBRA was the codename for the breakout from the Normandy Beachead south of St Lo. On 25 Jul 1944, 1500 heavy bombers, 400 medium bombers, and 550 fighter bombers opened a corridor through which allied ground forces penetrated German defenses. (16:26) This operation marked the beginning of very close cooperation between air and ground forces. VHF radios and highly qualified pilots were placed in lead 1st Army armor formations to ensure instantaneous coordination between ground units and air force fighter bombers overhead. (6:319-321; 16:26) Close support procedures included no-bomb lines to protect allied troops, direct radio contact between ground and air forces, targets marked with smoke if possible, and friendly vehicles identified by colored panels. (6:299-300,318)

Free from the Normandy beachead and with the army-air force organization for joint employment of airpower working effectively, Ninth Air Force fully exploited the flexibility and responsiveness of its tactical aircraft. The best example of this was when XIX TAC, supporting General Patton's

3rd Army, was given full responsibility for protecting the army's exposed right flank as it raced across France. Constant reconnaissance and fighter bomber attacks resulted in such a high degree of allied success that the German commander in the area asked XIX TAC commander Brig Gen O.P. Weyland to be present at the surrender of German forces on 7 Sep 1944. (6:324; 16:29)

Tactical airpower's success during this period of the war was attributed to two factors. First, forward air controllers were given the latitude to divert tactical sorties to more critical or threatening targets as required. Second, Ninth Air Force retained sufficient control of tactical operations in order to shift the air emphasis where it was needed along the front. (16:31)

With the rapid advance across Europe, allied lines of communications became longer and German resistance stiffened. The allied advance slowed as the Siegfried Line was approached until the battle turned into general static warfare by Dec 1944. (9:595; 16:31)

During mobile warfare, PHASE 3 operations were a key factor in ground force movement. Fighter bombers worked in close proximity to US forces to destroy enemy artillery, supplies, and armored formations. US fighters conducted armed reconnaissance missions over enemy territory to restrict German mobility and were available for divert in order to satisfy close cooperation requests. (16:37) One of

the most valuable uses of tactical airpower during WW II use in armed reconnaissance. These missions were highly effective in searching enemy rear areas and attacking targets of opportunity. Throughout the war, Ninth Air Force armed reconnaissance sorties seriously interfered with the movement of German forces and supplies. (6:299)

As the momentum of the battle slowed, PHASE 3 operations decreased. Ground commanders brought artillery forward to strike German front line targets. During the period of static warfare, US tactical air forces concentrated on PHASE 2 objectives to interdict German reinforcements before they reached to front lines. (16:37)

The Battle of the Bulge (Dec 1944-Jan 1945)

On 16 Dec 1944, the Germans launched a major counter-offensive through the Ardennes designed to cut the communications lines of the US 1st and 9th Armies, and the British 21st Army Group. German planners saw the possibility of isolating and destroying 20 to 30 allied divisions. (9:673) Airpower played a critical role in blunting the German advance and the Battle of the Bulge, as the allies referred to it, provided perhaps the best parallel with the current tactical situation in Central Europe.

The penetration in the allied front dictated a realignment of US forces and put Ninth Air Force flexibility to the ultimate test. Operational control of 1st and 9th

Armies was transferred to the British 21st Army Group in the north, under the command of Field Marshall Montgomery. This meant that IX and XXIX TACs came under the control of the British Second Tactical Air Force, which supported 21st Army Group. (9:686; 16:41)

To ensure an equitable distribution of tactical airpower, XIX TAC to the south was augmented by the transfer of three fighter bomber groups from IX and XXIX TACs. Allied air forces were also supported from Great Britain. Ninth Air Force took operational control of two US Eighth Air Force fighter groups and the entire 2nd Air Division of heavy bombers. (9:686; 16:41)

General Eisenhower's strategy was to contain the German salient within a prescribed ground area while destroying the enemy's momentum by attacking his source of supply. Eighth and Ninth Air Force bombers attacked railroads, bridges, and communications centers along two concentric lines of interdiction in the German rear area. The objective was to limit the enemy's mobility, restrict his operational flexibility, and cut his communication and supply lines. (9:690-692; 16:41-42) Fighter bombers assisted in this operation by flying extensive PHASE 1 and PHASE 2 sorties. They divided their efforts between airfield attack to restrict Luftwaffe operations, air escort of medium bombers and resupply aircraft, and armed reconnaissance throughout the enemy sector to restrict rail and road

transport. (9:692, 697-699)

Once air superiority was reestablished, PHASE 3 operations, to provide close support to ground forces, began at the expense of PHASE 1. (16:42)

Five good days of flying weather between 23-27 Dec 1944 enabled the allied air effort to effectively paralyze the German offensive. Cutoff from supply lines, critically short of fuel, and unable to move during daylight hours, German ground forces were forced to retreat to defensive positions outside the bulge. Once the retrograde started, Ninth Air Force fighter bombers destroyed thousands of German vehicles as they moved east along various main and secondary roads. (9:709-710; 16:43)

The German Luftwaffe put forth its maximum effort on 1 Jan 1945 when it flew approximately 600 sorties on a dawn raid against British and American airbases in the forward area. Allied fighters and AAA destroyed more than half of the attacking force through effective teamwork. Heavy Ninth Air Force aircraft losses on the ground were replaced within 24 hours from US assets in Great Britain, thus illustrating the critical significance of the US industrial and resupply base. (16:42-43)

The March Across the Rhine and Final Victory (Jan-May 1945)

After the Ardennes offensive, Ninth Air Force resumed its three phased air campaign as 12th Army Group approached

and then crossed the Rhine River. As 1st Army established a bridgehead at Remagen, IX TAC flew 24 hour fighter air patrol to guarantee local air superiority while other tactical aircraft swept ahead in offensive counterair operations to attack German airbases that could threaten the crossing. (16:45) Fighter bombers maintained an intense armed reconnaissance effort to destroy enemy reinforcements, and Ninth Air Force dispatched medium bombers to conduct interdiction strikes against railroad and command and control targets that could support German forces in the immediate river crossing area. (9:769-770)

As the pace of advance across Germany quickened, Ninth Air Force fighter bombers flew mostly armored column cover, enabling friendly ground forces to rapidly bypass roadblocks and eliminate German strongpoints. Defensively, the same aircraft flew protective combat air patrol over large formations of allied armor which were vulnerable to German air attack. (9:784; 16:46-47)

By early May 1945, after American and Russian forces had linked on the banks of the Elbe River, the Ninth Air Force mission was complete. Tactical offensive operations ended several days before VE-Day.

Nato Air Campaign

Introduction

A detailed, theater level air campaign plan similar

to WW II does not currently exist in NATO. Political constraints and the feeling that accurately looking past the first phase of a general war in Europe is not possible have precluded formalized long term campaign planning. (20:132, 135) Former CINCUSAFE and COMAAFCE, Gen Charles Donnelly addressed this issue during a lecture to the National War College on the application of airpower in Europe:

> When, where, and how much to use are questions of operational art. Much of this art must come out as a war unfolds. Prewar planning cannot totally compensate for the fog of war. Decisions on campaigns and force management depend on the situation. (10:5)

Allied Tactical Publications (ATPs) define combined NATO doctrine which provides the framework for joint-combined synchronization at the tactical level. (20:132) ATPs cover the full range of conventional air missions currently found in NATO. Although far from a campaign strategy, these missions form the basis for examining NATO's current air warfighting philosophy. ATPs establish the principles, organization, and fundamental procedures generally agreed upon between the US and the NATO allies. (1:2)

Air Campaign

The key to NATO's success in the Central Region, against a numerically superior Soviet and WP threat, hinges on a jointly developed and executed strategy for employing air and land forces. As Commander 2ATAF has stated, "In any major conflict in Central Europe there would be no separate land and air battles. We could only hope to succeed by

fighting a joint land-air battle from the outset." (25:23)

To support this statement, COMTWOATAF, working with NORTHAG, has established the following priorities for his air campaign:

1. Counterair operations: prevent enemy aircraft from attacking NATO ground forces and key installations such as airfields.

2. Offensive Air Support: tactical reconnaissance, close air support for the land battle, and battlefield air interdiction to cutoff enemy reinforcing units that would otherwise join the fighting in 24-36 hours. (25:4)

COMFOURATAF, working with CENTAG, also feels strongly about joint operations. His air campaign will focus on three main areas of concern:

1. How to fight the battle for air superiority?

2. How to fight the battle around the forward line of troops?

3. How to fight the battle behind the enemy's front echelons as well as the deep battle? (8)

These major priorities and concerns form the tenants of tactical air support for land operations, as defined in ATP-33B. Tactical air support encompasses air operations conducted to influence the land battle and includes the following basic air operations: counterair, offensive air support, and air interdiction. (4:1-2)

Counterair Operations

By any measure, air superiority remains the number one priority in any NATO air campaign for Central Europe. As in WW II, air superiority, or at least a favorable air situation over selected areas of the battlefield, is essential for the successful outcome of the land battle. (2:5-1; 10:5) To defeat the enemy on the front lines, defeat forces moving up in the second echelon, and keep the conflict conventional, NATO must control the air war. (8) What NATO ground commanders want most is relief from enemy air attacks so they can engage enemy ground forces head to head without fear of hostile air action. (25:28) Offensive air support for the ground forces is expected, but it is secondary to air superiority.

In the event of a WP attack, high aircraft attrition is expected on both sides and the fight for air superiority may well be decided in three or four days. (19:80) Top priority falls on destroying as much WP offensive air capability as possible as quickly as possible. (8) This will be accomplished through defensive and offensive counterair operations.

Defensive Counterair

Since NATO is a defensive alliance, it will be forced to absorb an initial WP air attack aimed at high value targets in any future conflict in Europe. This will be significantly different than the allied experience in WW II.

WP forces will go all out to destroy NATO's air defense infrastructure, especially command and control facilities and airfields. (25:4) Early in the conflict, and lasting for several days, NATO will give top priority to air defense using interceptor aircraft and surface-to-air weapons systems in a coordinated effort to protect friendly territory. (25:4) Unless damage to NATO airfields and air defense systems can be controlled, the alliance will be hard pressed to counter-attack against enemy airfields and provide air support to friendly land forces. (25:4) By closing NATO main operating bases early in a conflict, the WP will have taken a major step toward gaining air superiority.

In the Central Region, NATO aircraft flying defensive counterair (DCA) missions will aggressively engage enemy aircraft as soon as they cross the Inner-German Border with the objective of disrupting the attack timetable, breaking-up formations, and inflicting heavy losses. NATO will be forced to use most of its air defense and ground attack capable aircraft, such as the F-16 and F-4, in the interceptor role to augment dedicated air defense aircraft such as the F-15. (25:5) Allied air defense aircraft will be used to protect sections of NATO airspace in coordination with friendly surface-to-air missiles (SAMs), or to provide combat air patrol (CAP) over high value NATO assets and installations.

Because the threat will be numerically superior, NATO

will rely heavily on force multipliers to help balance the scales. Air assets such as the NATO Airborne Early Warning Aircraft, COMPASS CALL communications jammers, and EF-111 radar jammers will be critical to the defensive counterair effort. (8)

Offensive Counterair

NATO can not win the air battle and gain air superiority against numerically superior WP air forces by staying on the defensive. Offensive counterair operations are conducted to limit the enemy's airpower as close to its source as possible. (2:5-1)

As soon as the defensive battle has stabilized, NATO will go on the counterair offensive by attacking enemy airfields with long range fighter bombers. (8; 25:10) The first two days of a European conflict will be crucial in creating a favorable air situation. Most aircraft capable of offensive counterair (OCA) will be committed, at maximum sortie rates, to pinning down WP forces on their airfields. (25:24) The objective will be to reduce the number of sorties the enemy can generate against NATO airfields and ground forces, and destoy the timing of his air offensive. (8; 25:10) As COMTWOATAF states, "if we can block the runways and taxiways at his main offensive operating bases, and keep them blocked with repeat attacks, then we would be well on the way to gaining a favorable air situation." (22:11)

How will these airfield attack missions be accomplished? Due to the high threat environment, NATO will be forced to use defense suppression in order to roll back enemy defenses and minimize attrition. (14:87-88) The attacks that follow will take out runways and taxiways, aircraft on the ground, and key logistic and infrastructure targets. (8) Force packages will be used to penetrate the enemy's integrated air defense system. Defense suppression, electronic countermeasures, and tactical reconnaissance aircraft may accompany the air-to-ground attack force. (8; 25:11,51) NATO hopes to keep WP airfields closed for 12 to 24 hours after each attack; however, it is virtually impossible to keep an airbase closed indefinitely due to such things as rapid runway repair. (25:14,51) NATO will be forced to revisit WP airfields on a continuous basis in order to control the European air battle. (8) If WP main operating bases can be put out of action for even a short time period, however, enemy aircraft will be forced to operate from secondary airfields where they will be more vulnerable due to lack of aircraft shelters and less sophisticated surface-to-air defenses. (19:78)

The dilemma for NATO air commanders is that long range attack and escort aircraft used for airfield attack are the same assets that could be used for the air interdiction campaign. (10:5) The air component commander's interdiction

effort can not begin in earnest until airfield attack responsibilities have been fulfilled.

Offensive Air Support

In the NATO context, offensive air support is made up of tactical reconnaissance, battlefield air interdiction, and close air support. (3:5-1; 4:1-2) OAS forms the principal handshake between air and land forces for cooperation in a conventional conflict in Europe.

Tactical Reconnaissance

Due to force imbalances and the speed at which a future conflict in Europe will unfold, accurate and timely intelligence on the enemy order of battle is critical to NATO ground commanders. Although much information is available from overhead satellite systems, tactical reconnaissance is the most reliable means of determining what is happening in enemy territory. (25:16) NATO commanders require a running survey of the disposition and movement of enemy ground forces. The corps commander can not move a blocking force, such as a brigade or division, into correct position without advanced warning of where the enemy is going to be and in what strength. (25:17)

Battlefield Air Intersection

Soviet land force doctrine stresses force in-depth and echelonment. The Soviet's desire is to feed fresh forces into the main battle to maintain momentum. After air superiority, the next priority for NATO ground commanders is

to prevent these second echelon WP reinforcements from joining the front echelons in the main battle area. (25:28)

Once enemy movement is detected, battlefield air interdiction (BAI) missions will begin against follow-on forces behind the main battle area. (25:17) NATO will place heavy emphasis on interdicting these forces under the concept of follow-on forces attack (FOFA). This portion of the air campaign will focus on choke points along main axes of attack in order to delay and disrupt movement to the front. (25:18) Timing is critical to WP invasion strategy. From theater to company level, everything is based on timing and this dependence affords the greatest opportunity for success in the deep battle. (8) The objective will be to canalize the flow of follow-on forces, control the rate at which these forces reach the front, and dictate the tempo of action in the main battle area. BAI is designed to hit enemy forces farther back, before they deploy into battle formation, thus offering more concentrated and lucrative targets. (25:20-21)

Close Air Support

Close air support (CAS), in today's context, is viewed as direct support of the ground commander over or near the land battle. It will be closely controlled by forward air controllers in the air or on the ground. In a European conflict, CAS will most likely be directed toward enemy armor (tanks, personnel carriers) and artillery. (25:18) It will

be used primarily in situations where the ground commander can not control the situation with organic armor, infantry, artillery, or attack helicopters. The NORTHAG/TWOATAF position is that fixed-wing CAS will not be used merely as an extension of organic army firepower. These aircraft would be better used and more effective in hitting interdiction targets beyond the range of ground artillery. (25:19)

CAS forces will be employed against concentrated targets in the main battle area or as a blocking force to gain time for NATO ground forces to move into defensive positions. (25:19-20) Another prime role for CAS aircraft will be during a NATO counterattack where maximum firepower is required to break through enemy formations. The air objective will be to isolate the battle area and create salients or killing zones containing large numbers of WP tanks and armored vehicles. (25:20)

The key to success in the offensive air support campaign is that ground attack aircraft must be committed in mass to provide concentrated firepower. They can not be employed in "penny packets" that dilute effectiveness and waste valuable but limited assets. (25:24) This is a primary lesson learned from WW II.

Air Interdiction

When counterair requirements have been met, specifically airfield attack, significant numbers of long range attack assets will be released for deep interdiction

missions. (25:28) The air interdiction campaign for Central Europe will stretch from behind the area of offensive air support to as far into the enemy's rear area as NATO target acquisition and conventional weapons can reach. NATO's ground commanders and air commanders have overlapping interests in this area, however, approximately 100km in front of each NATO corps is the limit of the corps commander's planning responsibility for air interdiction operations. (25:31) Air forces conduct campaigns of their own as well as support joint-combined ground operations so the air component commander will target missions well beyond this 100km (approximately 60NM) range. (10:4; 25:24)

The objective of air interdiction is to destroy, neutralize, or delay the WP's military potential before it can be brought to bear against NATO forces. (3:5-2) Targets include forces, supplies, and means of delivery. (3:5-2) Chief among the proposed targets will be transportation systems such as road, rail, and bridge networks in the enemy's rear area. (25:29) Properly executed, the deep air interdiction campaign linked with follow-on forces attack will limit the enemy's capability to continue full scale action and provide the leverage needed to gain the initiative from a numerically superior WP force. (3:5-2)

Comparative Analysis Air Campaign World War II vs NATO

What lessons from WW II are applicable to NATO's air campaign for Central Europe?

As shown in the preceding pages, the air commander's concerns in Ninth Air Force during WW II are the same concerns that face NATO air commanders today: air superiority; support for the ground forces engaged with the enemy; and interdiction in the enemy's rear area. Doctrinally, certain terms have changed, however, these three basic areas of interest are as valid today as they were over 40 years ago.

Counterair Operations

Air superiority is still the number one priority. It is the linchpin that makes or breaks all the other parts of the air and ground campaign. This was proved in North Africa and proved again in Europe during WW II.

German ground commanders after the war were almost unanimous in their statements that allied airpower was one of the deciding factors in their defeat. Overall air superiority from Normandy to V-E Day provided a degree of operational mobility and logistic freedom that was a tremendous advantage to all allied forces. (9:805-806)

How was this air superiority achieved, and how is it going to be achieved today? During WW II, Ninth Air Force's quest for tactical air superiority was guided by FM 100-20, which placed the highest priority on control of the air. Air

superiority would be gained and maintained by airfield attack, destroying aircraft on the ground, and by offensive fighter action in the air. These tenants can be traced throughout Ninth Air Force operations in Europe. During the Normandy landing, Ninth Air Force struck German airbases surrounding the invasion area, destroyed selected radar stations, and attacked the Luftwaffe in the air and on the ground. Similar actions to secure local air superiority were carried out across France, during the Battle of the Bulge, crossing the Rhine, and during the march into Germany.

The real story of air superiority over Europe during WW II, however, lies in the strategic arena, and actually occurred before the Normandy invasion. In prewar strategy development, the US planned to break the back of the German Luftwaffe through countervalue strategic bombing of aircraft production facilities and supporting industries. (11:40) The existing thought was that there would eventually be pilots but no aircraft to fly.

Starting in Jan 1944, with sufficient bombers and long range fighter escort, the allies effectively defeated the Luftwaffe in three months. (13:101; 11:8) Instead of countervalue strategic bombing, however, the German Air Force was defeated tactically through air combat with Eighth and Ninth Air Force fighters and through attrition in attacking Eighth Air Force bomber penetrations. (11:41) German fighter

production continued at high levels throughout most of the war. In the end, it was the loss of experienced German pilots that gave control of the skies to the allies. (22:303,312) To be sure, allied strategic bombing of petroleum production and distribution facilities severely limited German pilot training. The strategy of 1944-45, however, where US fighters were released from bomber escort to sweep across Germany and seek out and destroy the Luftwaffe in the air and on the ground, provided the telling blow. (13:114; 11:37,41) For the first time, fighters were used in their true offensive role. (11:37) After Mar 1944, allies possessed air superiority. The German Air Force continued to menace allied operations, but it had lost control of the skies over Europe. (9:47)

How does this tactical and strategic WW II history apply to NATO today? First, no strategic bombing campaign will be conducted on the enemy's homeland to compliment NATO's tactical air campaign to gain air superiority. Second, NATO's plan to gain air superiority in the Central Region stresses defensive counterair as the first step followed by an offensive counterair campaign. In current NATO thinking, however, offensive counterair centers primarily on airfield attack in order to limit WP sortie generation. There appears to be limited consideration given to offensive sweep tactics to hunt the enemy in the air, yet

these were the very tactics that won overall air superiority during WW II and broke the back of the Luftwaffe.

There are several reasons why NATO doesn't look to offensive sweep tactics. First, the US and NATO have limited air superiority aircraft, and care must be exercised to preserve these valuable assets. In the USAF, for example, which stands at roughly 38 Tactical Fighter Wings, only seven wings are designated for air superiority, contrasted to over 10 wings dedicated to close air support of ground forces. (17:29-5, 29-6) America's industrial capacity cannot rapidly replace large fighter losses, as it did in Jan 1945 after German attacks on allied airbases during the Battle of the Bulge.

The second reason that allied air superiority tactics have changed in Central Europe is that NATO fighters must initially defend friendly airspace and high value assets and installations. During WW II, IX Air Defense Command was charged with this mission, freeing the fighters in each TAC to aggressively engage the enemy over hostile territory.

Finally, the lethality of the combat arena has greatly increased. The range, accuracy, and kinds of enemy weapons have improved to the point that survival using the classic WW II sweep tactics is questionable.

The implications for NATO are significant. We may not enjoy the same degree of air superiority that we did in WW II. Ground and air commanders will be challenged, and

will not have the operational mobility and logistic freedom that we enjoyed in Europe from 1944-45.

Offensive Air Support

Reconnaissance

Valuable tactical reconnaissance lessons can be learned from WW II. Early in the conflict, it was determined that the number of reconnaissance forces in Ninth Air Force were inadequate to accomplish the mission. A minimum of one reconnaissance group was later assigned to each TAC. The 67th, 10th, and 363rd Tactical Reconnaissance Groups, working with the IX, XIX, and XXIX TACs respectively, provided critical information to both ground and air commanders.

In NATO today, tactical reconnaissance is an essential part of the theater campaign plan. Used as a force multiplier to help ground commanders move units where and when they are needed, tactical reconnaissance is also a vital part of NATO's concept of follow-on forces attack. The key to operating against the enemy's second echelon is rapid intelligence gathering and dissemination. While improvements such as the Joint Surveillance Target Attack Radar System (JSTARS) will fill a much needed requirement, manned tactical reconnaissance aircraft, as in WW II, will continue to play a prominent role. Due to budget constraints, US Air Force tactical force structure decisions over the past several years have tended to downplay the role of manned

reconnaissance. This may, in fact, be a limiting factor based on projected NATO requirements and lessons learned from WW II in Europe.

Battlefield Air Interdiction and Close Air Support

In the areas of battlefield air interdiction and close air support, several interesting comparisons can be drawn from WW II.

Ninth Air Force fighter bombers in Europe were used quite effectively in the armed reconnaissance role. They would search the enemy's rear area and attack targets of opportunity. As an example, these tactics were used before the Normandy invasion to destroy enemy railroad traffic, during Patton's march across France to protect the 3rd Army's right flank, and during the Battle of the Bulge to destroy German armor formations. Post-war analysis determined that armed reconnaissance in Europe seriously interfered with the movement of German forces and supplies, and was a principal employment concept used in the allied air campaign plan. (6:299)

During highly mobile phases of the war in Europe, such as the breakout from the Normandy beachhead in 1944, and the march to the Elbe River in 1945, Ninth Air Force fighters provided close column cover to advancing allied armor formations. Using VHF radio communications, these sorties helped the ground forces bypass obstacles and defeat enemy strongpoints.

In today's campaign scenario in Europe, armed reconnaissance and close column cover are not practiced by US forces. The reason, again, is the uncertainty of air superiority, especially over hostile territory, and the lethal surface-to-air threat environment which makes survivability questionable.

Interdiction

During WW II, the interdiction campaign, like the fight for air superiority, was a partnership between Ninth Air Force tactical operations and the allied strategic bomber offensive. As stated in Chapter II, Ninth Air Force was organized to strike anywhere in the 12th Army Group area to a depth of 200 miles. (16:8) It had its own light/medium bomber force that was used extensively in campaigns such as Gen Eisenhower's transportation plan to destroy the French railroad system and isolate the Normandy landing area. Interdiction was a key factor again in the Battle of the Bulge when the Germans were cutoff from their supply base. IX Bomber Command was a very effective force that was used from the air force level and placed at critical points and against critical targets to shape the outcome of the battle.

The lesson from WW II is that an interdiction campaign is most effective when it is used to counter a large scale offensive ground force penetration. These offensive operations consume large quantities of fuel, ammunition, and

supplies and are therefore especially vulnerable to a well timed interdiction campaign. (14:17; 21:166-167) This lesson is very applicable to a WP invasion scenario in Europe where enemy doctrine stresses rapid advance and high tempo of operations.

The dilemma in Europe is that NATO has limited long range, all weather interdiction assets, and these assets are the same ones used for airfield attack during the critical offensive counterair campaign. Additionally, NATO will not have a complimentary strategic bombing offensive, as in WW II, that can be called on to assist in the tactical air campaign.

The solution to this problem for NATO appears to be in the area of operational art and in knowing how to use limited air resources to maximum advantage. As Gen Donnelly, former CINCUSAFE and COMAAFCE, has said, "the key lies in flexible capabilities, flexible control, and flexible commanders to fully exploit airpower advantages as the war unfolds." (10:7)

CHAPTER V

CONCLUSIONS

The objective of this Defense Analytical Study has been to analyze today's air campaign plan for NATO's Central Region in light of experiences gained during WW II in Europe. The central question was, what tactical and strategic lessons from WW II are applicable to NATO today? US Ninth Air Force and its support to 12th Army Group was the primary historical example used for comparison with NATO's current air and ground posture in Europe.

Opening chapters examined the organization of forces and the military strategy in Europe during 1944-45 as compared to today. This groundwork was necessary in order to fully appreciate the factors that drove the air campaign during WW II and the factors that presently affect NATO's air campaign thinking. The final chapter provided a comprehensive review of the air campaigns from both periods, and offered an analysis of NATO's current concept of operations. Many lessons from WW II reinforce NATO's present air campaign philosophy, while others offer food for thought on issues that may hinder our ability to conduct tactical operations in Central Europe.

Organization of Forces

Many tactical command relationships in Europe during WW II still exist, and today's NATO air-ground fighting force has its historical roots in WW II.

Creation of Allied Air Forces Central Europe (AAFCE) in the mid-1970s corrected the problem of centralized control that was noted during Ninth Air Force operations in Europe. (10:4; 16:4) All Central Region air assets are now under a single air commander. This arrangement helps ensure that airpower advantages of mass, responsiveness, and flexibility will be exercised to the maximum degree possible.

Ninth Air Force during WW II stressed organizational and operational flexibility which permitted airpower to be employed when and where it was needed. Examples include IX Engineering Command that provided airfields, IX Air Defense Command that provided aircraft to protect the rear area, and mobile Tactical Air Commands (TACs) colocated with field armies for face-to-face planning "and" execution of air support missions.

NATO air forces in Central Europe today appear to lack the same degree of organizational flexibility. There are no dedicated engineering commands for large scale airbase construction or repair. A separate air defense command to provide dedicated air defense fighter aircraft does not exist, and this forces NATO's air superiority aircraft to fill both defensive and offensive counterair taskings.

Finally, mobile, colocated TACs have been replaced with fixed ATOCs and SOCs for execution of air support and air defense missions, and face-to-face planning by army and air force headquarters staffs now takes place at the ATAF and Army Group level. Fixed ATOCs and SOCs limit the mobility of today's tactical air command and control structure as compared to WW II.

Military Strategy

In no other area are the contrasts as great in comparing WW II with the present than in military strategy.

The WW II military strategy against Germany from 1944-45 was offensive in nature and combined a tactical air and land campaign with a strategic bombing offensive. The objective was total defeat and unconditional surrender of the enemy. From an airpower perspective, the strategic and tactical levels of war merged against Germany during WW II. Strategic bombing of key industrial targets in Germany had a significant impact on the threat faced by the allied ground and tactical air forces in Europe. This key aspect of western strategy during WW II is not part of NATO's postulated air campaign.

Today, NATO strategy is deterrence oriented and based on an initial defensive posture. As a result, NATO will be forced to absorb an initial WP attack. War termination will be based on restoration of current borders not unconditional

surrender. The impact of this military strategy is that the air campaign as well as the land campaign in NATO today will be as much political as military and more difficult to execute than the one implemented by Ninth Air Force during WW II.

Air Campaign

Operational lessons from WW II provide invaluable insights into which portions of a future air campaign will work and which will not. North Africa proved the value of unity of command and the importance of air superiority. These lessons led to revised air force doctrine in FM 100-20 which guided US air operations throughout WW II.

The three prioritized phases of the tactical air campaign in WW II ... gain and maintain air superiority, interdict troops and supplies in the enemy's rear area, and provide close support to the ground force ... directly equate to today's missions of defensive and offensive counterair, air interdiction, and offensive air support. These missions are the main concern of air commanders in NATO's Central Region.

Counterair

In the event of a WP attack, air superiority may be harder to achieve than in WW II. NATO lacks a dedicated air defense fighter force, so its air superiority aircraft will be tasked to conduct defensive counterair missions as well as

support the offensive counterair campaign. NATO will not benefit, as Ninth Air Force did, from a strategic bombing campaign against the enemy's heartland to augment counterair operations. NATO air superiority assets are limited in number and the lethality of the threat means that offensive sweep tactics into enemy airspace, to hunt the Warsaw Pact Air Force in the air, will most likely not take place. It should be noted that these WW II offensive sweep tactics, flown by 8th and 9th Air Force fighters, delivered a telling blow against the German Air Force during WW II.

Offensive Air Support

Battlefield air interdiction and close support for ground forces in NATO will be conducted using tactics and techniques originally perfected by Ninth Air Force. Two highly productive missions flown during WW II, however, armed reconnaissance and armor column cover, are not part of the projected US air campaign in NATO. The high threat environment and questionable status of air superiority preclude the use of US fighters to accomplish these missions.

Tactical reconnaissance was responsive, if at times limited in quantity, during WW II in Europe. Limited tactical reconnaissance capability may again become a factor, especially considering NATO's emphasis on follow-on forces attack, and present trends in reducing US tactical

reconnaissance force structure as a result of budget constraints.

Interdiction

Interdiction profoundly affected the balance of forces on the ground in Europe during WW II. Ninth Air Force had its own bomber force that was augmented at critical times by allied strategic bombers. This transfer of heavy bombers from the strategic war to assist ground forces in tactical operations revealed the flexibility and versatility of airpower in WW II. NATO today will not benefit from a strategic bombing campaign such as in WW II. Its long range interdiction assets are limited in number and these aircraft will also take part in offensive counterair operations to hit Warsaw Pact airfields. The success of NATO's interdiction campaign rests on the timely and effective transfer of assets to attack key targets when and where they will hurt the enemy most.

Summary

Ninth Air Force organization and operations during WW II produced a legacy that still shapes the execution of NATO's air campaign in Europe. Differences exist between the periods, however, valuable lessons still apply. During WW II, tactical airpower supported the invasion of Normandy and then spearheaded the allied drive across France and into Germany. Today, tactical airpower is still the leading edge

of NATO's defense in the Central Region. The air campaigns of both periods may be different in method but not different in objectives.

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